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the Needles along the Lower Colorado River, and considerable topographic mapping is now in progress in various portions of Arizona, but is as yet uncompleted. Topographic parties will also be actively at work all winter in Texas and in southern California

During the season considerable triangulation was extended in the High Sierras in the vicinity of Mt. Whitney, the highest peak in California. Boundary surveys, to mark the outlines of forest reserves, were completed in various portions of the West, considerable work being done about the Pocatello Forest Reserve, in Idaho, and upon the boundaries of Aquarius, Logan, and Payson Forest Reserves, in Utah. In the State of Montana a portion of the boundaries of the Lewis and Clark Forest Reserve was surveyed. W.

THE GEOGRAPHICAL RECORD.

AMERICA.

INFLUENCE OF CANALS IN OHIO.—The story of the construction of the Ohio canals is well told by George W. Dial (Ohio Arch. and Hist. Quart., Oct., 1904). He says that as the Erie and Champlain canals made New York the Empire State, and as the Pennsylvania canals made Pennsylvania the second State, in the Union, so the Ohio canals made it the third State in importance. In 1829 merchandise was carried from New York City to Dayton, Ohio, by an all-water route of 1,100 miles in twenty days at a cost of $17.25 per ton. The route followed the Erie Canal to Buffalo, the lake to Cleveland, the Ohio Canal to Portsmouth, the Ohio River to Cincinnati, and the Miami Canal to Dayton. The canal counties immediately took the lead in industrial and agricultural growth—a lead they have never lost, as to-day only thirty out of the eighty-eight counties contain 52 per cent. of the State's population. To provide for a sufficient supply of water at all times, the State began the construction of immense reservoirs. The Mercer County reservoir, containing 18,000 acres, is said to be the largest artificial lake in the world. The canal system cost the State over $14,000,000, and for a quarter of a century the canals were the most comfortable and convenient means of transportation and travel. Hundreds of sixty and eighty ton freight boats plied up and down between all points; while regular passenger packets, accommodating from forty to sixty travellers, connected with all stage and steamboat lines.

FOREST-PLANTING IN WESTERN KANSAS.—Under the title *Forest Planting in Western Kansas*, by R. S. Kellogg, the Bureau of Forestry has issued Bulletin No. 52 (1904), in which the results of investigations to determine the kinds of forest trees best adapted to western Kansas and the methods of treatment which have proved most successful are set forth. That natural forests are absent on the Great Plains is a well-known fact; but it is also coming to be equally well known that, with intelligent selection of species and proper care, planted trees may, to a considerable extent, supply the deficiency. In time this planting will be sufficient to have a marked effect upon the landscape, and to supply wood for domestic purposes. That forest-planting is problematical as to its effect upon precipitation is generally known, but that it does conserve moisture and check wind-movement is undoubtedly true. By a careful selection of species suited to the special conditions in which the planting is to occur, and by intelligent cultivation, much may be done even in regions as unfavourable, apparently, as western Kansas. The work of the Bureau of Forestry, as is again evidenced by this Bulletin, is being done along much-needed lines, and the next generation will see a very different condition of things as regards tree-growth over the Great Plains than that which is now passing away. R. DEC. W.

AGRICULTURE IN THE COPPER RIVER COUNTRY.—Major Abercrombie, U. S. A., has read a paper before the Franklin Institute, Philadelphia, in which he expresses a high opinion of the agricultural possibilities of parts of the Copper River country along the line of the military railroad across Alaska, the building of which he superintended in the years 1898–1901. In that period the entire valley, embracing the main and sub drainage of the Copper River, had become well known. A road and bridges had been built between Valdes and Eagle City on the Yukon, roadhouses had been put up, and prospectors had taken $185,000 of placer gold out of the ground and discovered the copper-bearing ores which add so largely to the natural wealth of that region.

Pioneer horsemen went over this trail in 1898 with hay and grain for their horses. The following year spears of timothy and grain were found along this trail, and there was a volunteer crop in 1900. Major Abercrombie thinks this is conclusive evidence that, when acclimated, grain and grass will mature and bring forth abundant crops. It has been proved in a small experimental garden that potatoes, turnips, beets, peas, lettuce, and radishes will grow abundantly when the proper soil, exposure, and drainage are obtained.

Major Abercrombie says there will be a demand for such supplies. The Chesna mining district, 250 miles inland from Valdes, will probably produce millions of dollars of gold dust within the next few years. Hay and grain at Valdes are worth, on an average, $40 a ton. These supplies cannot be transported into the Copper River valley to the Tonsena River for less than twenty-five cents a pound. Excellent opportunities, therefore, now await the small farmer who selects his homestead judiciously along the Trans-Alaskan military road with a view to erecting a bunk-house and barn for the accommodation of man and beast and for the cultivation of forage and vegetables. Major Abercrombie believes that the valleys of the Copper River affluents will also in future years supply the demand for cereals and vegetables, if not meat, of the thousands of miners who will extract the vast deposits of metal in the Chettyna, Kutsena, and other districts. He eliminates the Coast Range region as a source of supply of forage, because, owing to the heavy fall of snow, the spring is generally a month later than in the Copper River valley.

PLANTS AT HIGH ALTITUDES IN BOLIVIA.—In a paper read before the British Association on August 22d last, Mr. A. W. Hill gave an account of "A Journey around Lake Titicaca," in which the characteristics of the vegetation found up to 16,500 feet above sea-level were described. The majority of the plants show a striking uniformity as regards their vegetative habit, and usually grow in rosettes or mounds. They have long tap roots, which enable them to absorb water from the soil at a considerable distance below the surface, and their leaves are usually linear, and often hairy. These peculiarities are induced by the climatic conditions, since the plants have to endure a burning sun during the day, followed by a frost at night, with cold, biting winds. There is often a range of temperature of 70° in a few hours. R. DEC. W.

AFRICA.

KILIMANJARO AGAIN ASCENDED.—The Kibo summit of Mount Kilimanjaro, probably the highest point in Africa, was ascended in the last days of July and the first of August, this year, by three members of the East African Expedition, led by Prof. Dr. C. Uhlig. A letter from Prof. Uhlig to the Berlin Geographical Society (*Zeitschrift*, No. 7, 1904) says that the rainfall in that region has been uncommonly heavy this year. The great mountain, above 5,500 feet, has most of the time been completely hidden by heavy fog and clouds—a condition that was most unfavourable for climbing. Several glimpses, however, were obtained of the Kibo summit; and as no traces of new snow could be seen, it was surmised that the weather conditions in the higher altitudes had been more favourable. The ascent was more than usually difficult up to 11,000 feet, on account of fog and the water-soaked soil. Above that altitude, however, there was no evidence that there had been heavy precipitation for several months.

At a height of 15,416 feet the party reached the cave at the east foot of Kibo. The surrounding region was much drier than when Uhlig visited it three years earlier, and the snow limit was considerably higher. On August 2 the party ascended through the Johannes Notch to the crater wall of Kibo. The ice-masses in the crater were much smaller than formerly. It was evident that the unusually heavy precipitation at the lower altitudes had not been accompanied by accumulations of snow in the crater. The party spent three hours clambering about the summit, sinking at every step to their knees in the powdered ice and glacier snow.

SLEEPING SICKNESS IN THE CONGO BASIN.—A Reuter dispatch says that the expedition sent to the Congo by the Liverpool School of Tropical Medicine has forwarded a long report on its experiences. The expedition left Leopoldville on June 23, and reached Stanley Falls on Sept. 15. It was able to make fairly complete observations on the spread and distribution of sleeping sickness along the Congo from Stanley Pool to Stanley Falls—a distance of nearly 1,000 miles. The disease is a terrible scourge, especially among the tribes along the river and its tributaries. Its spread has been much assisted by the practice of taking large bodies of natives, soldiers, and labourers from one part of the Free State to another. The transportation of sleeping-sickness patients on the State steamers was forbidden several months ago. The tsetse fly was everywhere present from Stanley Pool to Basoko, at the mouth of the Aruwimi River. They were particularly numerous among the myriads of islands. Above Basoko there were very few flies, and none were seen above the mouth of the Lomami. It is an interesting coincidence that where there were many tsetse flies there was much sleeping sickness. Where these flies were few in number, cases of the disease were rare. The common species of tsetse on the middle Congo is *Glossina palpalis*.

CONDITIONS OF UGANDA.—The British Foreign Office has issued the report of Commissioner Sadler on the Uganda Protectorate for the year ending March 31 last, in which he says: "In social condition the Baganda have continued to make rapid strides, as is evidenced by the building of brick and iron houses by the chiefs, the use of furniture, groceries, and articles in common use in England, and the adoption of European methods of living; and by the commoner people in the change from bark cloth to cotton apparel, the use of petroleum to light their huts, and the increased demand for enamelled ware, boots and shoes, and cheap articles of European manufacture—conditions which are also permeating the neighbouring provinces."

SEASONS OF CROPS IN EGYPT.—A paper on "Egyptian Agriculture, with Special Reference to Irrigation," by P. N. Joannides, published in the *Scottish Geographical Magazine* for November, deals with various matters of importance in connection with agriculture in Egypt, such as the soil, climate, rise and fall of the Nile, composition of Nile waters, and irrigation. The agricultural year is divided into three periods, depending on the rise and fall of the Nile, as follows: 1st, The Shitwi, or Winter Season, which extends from the month of October to the month of May, and sometimes to July. The chief crops cultivated during this period are cereals, beans, clover, poppy, flax, vetches, etc. 2d, The Sefi, or Summer Season, beginning with March and ending with October or November. During this season some of the most important Egyptian crops are grown, such as cotton, sugar-cane, rice, melons, and all kinds of vegetables. 3rd, Last comes the Nili, or Flood Period, which extends from August to the end of October. This is the period of High Nile. Millet and maize are the chief crops grown, though cotton, sugar-cane, and others mentioned under the preceding season, are also under cultivation. R. DeC. W.

CLIMATOLOGICAL OBSERVATIONS IN AFRICA.—Part I of "Climatological Observations at Colonial and Foreign Stations" has recently been issued by the British Meteorological Office. The data included refer chiefly to stations in the Egyptian Sudan, British East and Central Africa, and Rhodesia, and the years are 1900-1902, with summaries for previous years. The Meteorological Council has for some time contemplated the issue of such summaries of observations received from the Foreign and Colonial Offices, or directly from observers in the British colonies and dependencies, but this publication has been impracticable until now. The volume was prepared under the supervision of Mr. E. C. Ravenstein, whose name is already well known in connection with African climatology, he having been chairman of a committee appointed by the British Association in 1891 for the collection and discussion of observations from tropical Africa. Sketch maps showing the location of the stations accompany the volume. R. DeC. W.

A PECULIAR CLIMATIC FEATURE IN CENTRAL AFRICA.—In the *National Geographic Magazine* for November, 1904, S. P. Verner, of the Department of Anthropology at the World's Fair, notes the following interesting climatic peculiarity in the southern part of the Congo valley for about 10° south of the Equator. The rivers and lakes are found to be bordered with a dense vegetation, which extends out from the water a distance proportioned to the extent of the water surface. Adjacent hills and mountains are often covered with dense vegetation on one side and are bare on the other. Beyond this bordering vegetation there are plains, almost treeless or with small scrub growth and thin grass. The explanation is given as follows: From May to October there is a dry season, with hot days and fairly cool nights (often 50° F.). The evaporation of the daytime is followed by condensation into fog at night. This fog moistens the country adjacent to the water surfaces and causes a luxuriant growth of vegetation. The morning winds blow the fog against the exposed sides of hills and mountains and up the valleys of tributary streams. Wherever the fog is not carried the country is dry. The natives reflect this characteristic of their hills by shaving off the hair from one side of their heads. Dense forests are found where the fogs prevail; while out of range of this moisture there is only a sparse vegetation. R. DeC. W.

CLIMATE OF NORTHERN NIGERIA.—In a recent address before the Royal Geographical Society, published in the *Geographical Journal*, Sir Frederick Lugard, British High Commissioner, gives many interesting facts concerning this new British province. The country is described as a land of "tornadoes," although these must not be confounded with our characteristic phenomenon of that name. Toward the close of the dry season, *i.e.*, at the end of February, wind-storms from the northeast, usually accompanied by thunder and rain, burst with great fury. These increase in frequency, and merge into the heavy rains, which last from July to October. With the ending of the rains, the whole Sudan presents a vista of prairie fires, and the harmattan wind begins to blow from the northeast. A thick haze obscures objects only a few hundred yards distant; the sun sets as a crimson disk about 5 P.M., and the natives wear veils and other coverings over their mouths and eyes as a protection against the dust. The wind blows intermittently for several days with violence, and then with moderate force, or even abates altogether, but is always from the same quarter, and its favourite hours are from 8 A.M. to 4 P.M. The harmattan heralds cold nights, and in January and February the cold is trying; but these nights add greatly to the comfort of Europeans. Rivers and lakes shrink, as they do in South Africa. Lake Ngami, "whose waves were so great that they are said to have dashed hippopotami to pieces when Livingstone discovered it in 1850," was, when Sir Frederick Lugard lived near it in 1896, "only a dry bed of the smouldering ashes of lacustrine vegetation." Abandoned wells were noted in every direction. In Nyassaland traces of the old level of the lake may be seen far inland to-day, and the Niger becomes less navigable every year. Where steamers drawing 8 feet could ascend within the memory of the present Deputy High Commissioner, 3-foot vessels can now with difficulty make their way for a much shorter period. R. DeC. W.

IMPROVEMENTS AT THE VICTORIA FALLS OF THE ZAMBEZI.—Now that the Rhodesian railroad has been extended to the Victoria Falls, the British South Africa Company is preparing for an influx of tourists, who are expected to travel 1,600 miles inland to enjoy what Mr. Knight has described as "the most beautiful gem of the earth's scenery." As the falls are over a mile wide and 400 feet high, they are about twice as broad and two and a half times as high as Niagara Falls. The "Park of Peace" is being laid out on the south side of the river. The only building in it will be a hotel five stories high, which is now being erected. From the edge of the park some of the finest views of the Falls may be obtained, and every effort will be made to preserve their beauty and grandeur unimpaired. Another park will be laid out on the north side of the river, but it will be more of a people's park; and will contain zoological gardens and grounds for sports. The site for the town which is to rise here will probably be two or three miles from the cataract.

TRANSVAAL METEOROLOGICAL SERVICE.—In the BULLETIN for September, mention was made of the new meteorological service of the Transvaal. Since the publication of that note, there has come to hand the *Administration Report of the Meteorological Department of the Transvaal for 1903–1904*, in which there is further information regarding this interesting undertaking. The building for the Government Observatory was occupied during the first week of May, 1904. There are accommodations for the installation of all the usual meteorological instruments, and also for a seismometer to be placed in the basement. The Observatory grounds cover 10.6 acres, but owing to lack of funds the Director's dwelling-house has not yet been begun. The new instruments received from England towards the end of the year 1903 were distributed as rapidly as possible, but four out of seven barometers which were sent by carrier away from railway lines were broken. Continuous records of several of the weather elements were begun at the Central Observatory on July 1st, 1904. Telegraphic or telephonic weather reports are received every morning from 29 stations in the colony. R. DeC. W.

ASIA.

THE ASSAM-BENGAL RAILROAD.—England has added a new railroad, 770 miles long, to the 26,000 miles of Indian lines previously opened. The Assam-Bengal railroad was begun in 1892, and opened for business last spring. It extends from the port of Chittagong in Eastern Bengal, on the northeastern coast of the Gulf of Bengal, to Sadiya on the eastern head stream of the Brahmaputra, not far south of the Tibetan border. Stretching through the eastern part of Bengal and Assam, it opens to commerce a very fertile and populous region, which hitherto has been without adequate transportation facilities. A large amount of the tea of Assam and the jute of Eastern Bengal will hereafter take this route. A part of the line through the Cachar Mountains was very difficult to build, not only on account of the tunnels, bridges, and other engineering works required, but also because it was necessary to bring provisions for the labourers, numbering 25,000 men or more, from considerable distances over mountain paths on the backs of elephants, camels, cattle, and mules.

In June, 1897, a severe earthquake greatly injured about 200 miles of the partly-built roadway and damaged many bridges in course of erection. Many labourers fell victims to malarial and other diseases, and nine members of the engineering force died before the completion of the work. The cost was about $40,000,000. It is expected that this line, tapping a new and rich country, will give a great impetus to the cultivation and export of tea and jute.

Chittagong promises to develop into a prominent export port.—(*À Travers Le Monde*, No. 47, 1904.)

THE CLIMATE OF THE PHILIPPINES.—By Rev. José Algué, S.J., Director of the Philippine Weather Bureau. Census of the Philippine Islands, 1903. Bulletin No. 2. 8vo, pp. 103. Department of Commerce and Labor, Bureau of the Census, 1904.

In the *Report of the Philippine Commission*, Vol. IV, 1901, pp. 115–357, there was published an elaborate report upon the climatology of the Philippines, with half-tone views of stations and instruments, and many plates and maps. This is the most complete discussion of the subject which we have. There has more recently been issued Bulletin 2, Census of the Philippine Islands, *The Climate of the Philippines*, in which Father José Algué, S.J., Director of the Philippine Weather Bureau, gives a shorter, more compact, and more accessible description of the climatic conditions of the islands. Much of the matter and many of the plates may be found in the first report, above referred to, but we note, as valuable additions, a map, in different shades of yellow, showing the mean annual temperature, and a second map, also in colours, showing the mean annual rainfall. In the former the map shows four distinct regions, classified as being of *high*, *intermediate*, *mild*, and *cool* temperature—the latter cool "because of altitude." By *high* is meant a mean temperature in the hottest months of 30° or 31° C. (86° or 87.8° F.); by *intermediate*, a mean temperature of not over 29° C. (84.2 F.) in the warmest months; and by *mild*, a mean temperature of April, May, and June not higher than 27° C. (80.6° F.). The fourth division includes stations like Baguio, for example (altitude 4,777 feet), where the temperature averages a good deal lower than on the lowlands. The mean annual rainfall is shown in six different shades of blue—viz., under 40 inches, from 40 to 60, 60 to 80, 80 to 100, 100 to 120, and over 120 inches.

Father Algué has done so much for meteorology and climatology that the following appreciation of him, written by Gen. J. P. Sanger, U. S. A., Director of the Philippine Census, and included in the introduction to Bulletin 2, is well worth repeating here: "The following interesting and scientific account of the climate and storms of the Philippines was prepared for the Philippine Census Report by Rev. José Algué, S.J., the Director of the Weather Bureau, Manila, whose tireless efforts in behalf of the Manila Observatory, and more especially of the Meteorological

Department, and whose scientific investigations and improvements in the instruments used in observing and recording atmospheric changes and in indicating the probable path of the storms, whereby the storm centre can be avoided, have made him the highest living meteorological authority in the Orient, and placed him among the foremost of the world's scientists." A well-merited tribute.

R. DeC. W.

EUROPE.

THE DELAY IN COMPLETING THE SIMPLON TUNNEL.—At a recent meeting of Swiss engineers at Winterthur, Mr. Sulzer told of the difficulties which had retarded work in the Simplon Tunnel. These difficulties, he said, were of the nature of surprises, because mistaken deductions had been drawn from surface indications concerning the position of the underlying rocks and the amount of water that was likely to be encountered.

Experts believed that the excavation would be largely through rock strata that had been inclined to positions approaching the vertical. The work of excavation, however, was chiefly through strata in a nearly horizontal position, which increased the difficulty of digging and roofing the tunnel.

According to the official geological profile and the opinion of geologists, the cutting between the kilometres 7 and 12 would be comparatively unimpeded by water; on the contrary, the calcareous schists encountered here were more or less saturated with water, which greatly impeded the advance. The experts had expressed the opinion that on the south or Italian side little water would be met, but that streams would enter the tunnel on the north side at about kilometre 5, a little below the Canter Valley. Here, however, the rock was dry, while large quantities of water entered at places where, according to predictions, none would be found. In August, 1900, about 1,000 litres a second were pouring from the southern mouth of the tunnel. It was thought that the volume of water would diminish; but it has, in fact, increased.

Another surprise was the great difficulty of overcoming the pressure upon the roof of a part of the tunnel. A stretch of 500 metres in the flooded portion threatened to cave in, and no means previously employed to overcome the pressure were effective. Large tree-trunks used as supports were broken. The vaulted roof was sheathed with iron, and forty-four iron supports were put in. The difficulty was conquered only after six months of dangerous work, during which the average advance in excavation was only 25 centimetres a day instead of 5½ metres.

Another difficulty was the increased temperature which suddenly rose from an expected maximum of 42° C. (107 .6° F.) to 55° C. (131° F.). The temperature of the rock rose even to 63° C. (145° 4 F.), and the conditions were almost insupportable. With the excellent means provided for lowering the temperature, it was finally maintained at about 25° C. (77° F.). Suddenly the temperature fell again, and no one understands the reason for these changes.

Another difficulty was the irruptions of hot water, the first occurring in the southern excavation in August, 1903. This inflow was soon exhausted, but a little later hot water began to flow into the northern excavation at a rate of 70 litres a second, temperature 48° C. (118 .4° F.). These irruptions neutralized the effects of artificial refrigeration, and interfered most seriously with the work.

Finally a great inflow of water, encountered at 10,376 metres, caused a cessation of work on the north side, and that part of the tunnel was hermetically closed, to prevent the complete flooding, while work was continued only on the south side. These were the causes of delay which compelled the constructing company to ask for an extension of time. The agreement was signed on October 9, 1903, and it was stipulated that the first tunnel and the basal gallery of the second tunnel are to be completed and opened to traffic on April 30, 1905.—(*Bulletin of the Bordeaux Society of Commercial Geography*, *November*, *1904.*)

ODENSE A SEAPORT.—This city, the capital of the richly-cultivated island of Fyen, Denmark, having now been connected with the sea by a ship canal, takes its place among seaports. Centuries ago the little river Odense-Aa was navigable for flatboats to the sea, but early in the sixteenth century this connection with the ocean became unusable, and Odense was consequently an inland town. The new canal is 19 feet deep, and the depth will soon be increased to 23 feet. In place of the small old harbour a large, deep basin with excellent docks has been provided. It is expected that the town will have important development as a seaport.—(*Geog. Zeitsch.*, Vol. 10, No. 10.)

THE INTERIOR OF AUSTRALIA.—In a recent paper on "Some Features of the Australian Interior" (*Scottish Geographical Magazine*, November, 1904), Robert M. Macdonald compares the depressing effect of the desert interior of Australia with the similar effect due to the silence and monotony of the polar regions. The flora of the bushland districts is characterized by the toughness and hardness of the wood, and by the depth to which the tendrils from the roots of some of the trees penetrate into the soil. In most cases, however, the trees tend to spread their roots out near the surface, in order to secure all possible moisture from the infrequent rains. As is usual in desert vegetation, the trees give very little shade. In one day a "buster," accompanied by a heavy dust-storm, scorched knee-high grass to the roots, "and the bushland had the appearance of a dead world, disturbed only by noisome snakes and deadly centipedes." The Australian "willy-willy," or tornado, is stated to be of frequent occurrence. R. DeC. W.

GENERAL.

The Olive.—Professor Dr. Theobald Fischer has written a monograph on The Olive (Der Ölbaum), which appears as Supplement No. 147 to *Petermanns Mitteilungen.* About twenty-five years ago he gave similar exhaustive treatment to the date-palm. The present treatise, the fruit of thirty years of personal observation and scientific study, is the most complete account ever written of the history, industrial aspects, and geographical distribution of the olive. While the tree is adapted for very wide cultivation, it has most prominently figured in the history of the Mediterranean countries, and is grown far more largely around that sea than in any other part of the world. There are 100,000,000 olive trees in Italy and 300,000,000 in Spain; while in Germany there are only 161,000,000 of all varieties of fruit trees. Although the surface of Tunisia is largely desert, there are 20,000,000 olive trees, and the small island of Corsica, with 36,000,000, is crowded with them.

Cortes introduced the olive into Mexico, but previous to 1810 the olive was one of the plants whose cultivation in Mexico was prohibited by Spain. It has made little progress in that Republic. Much of the southern part of the United States is adapted for olive-growing, and the industry is succeeding, especially in California, where in 1893 there were 278,380 bearing and 328,997 young olive trees; in 1894, 425,000 bearing and 1,360,000 young trees; while in 1895 about 800,000 trees were set out. Dr. Fischer says that the range of the olive north and south and the altitudes at which it will grow are the same in all countries.

Age of Glacier Ice.—Dr. Hans Reusch advances the theory (*Geog. Zeitsch.*, No. 7, 1904) that glacier ice may possibly attain enormous age under conditions where it is especially well sheltered.

To illustrate his idea he describes the Riings glacier, a small Norwegian ice stream that he has recently examined. The glacier occupies a comparatively large area in proportion to the small gathering-ground of the névé. Other special features are a raised ridge in the lower part of the glacier running parallel to its length, the extraordinary coarseness of the ice grains, and the clearness of the stream which issues at the lower end, showing that erosion is practically at a standstill. He thinks that the glacier is now practically inert, and from the indications he saw of the small annual amount of movement he suggests that some of the ice existing to-day may have dated from the Neolithic Age. The glacier he describes presents some unusual features, but a weak point in his theory seems to be that it is based upon the assumption that the rate of motion has always been as slow as it is to-day, of which there is no proof.

A PROPOSED GEOGRAPHICAL DICTIONARY.—Dr. Cleveland Abbe, Jr., writes to *Science* (No. 515, p. 649) that he is compiling a dictionary of technical topographic terms. The clearer understanding of the origin of many topographic features has caused a large increase in the number of these terms. We have also adopted many foreign terms for various forms of relief. These terms are scattered through a large mass of literature, and it will be useful to bring them together. Already over 300 terms have been catalogued. Dr. Abbe asks those interested to send him the following data for any topographic term they may meet in their reading:

1. The new term, and the inventor and first user of it in the given sense.
2. The etymology of the term, if possible.
3. The publication, volume, page, and year, where first used.
4. The original definition, preferably *quoted.*
5. The cited examples of the form or combination of forms to which the inventor, or first user, applied it.

THE SMITHSONIAN REPORT FOR 1903.—The geographical articles selected for republication in the *Report* of the Smithsonian Institution for 1903 are Mr. Alfred H. Brooks's description of his exploration to Mount McKinley; President Peary's valuable paper on his North Polar Explorations, 1898–1902; the British and Swedish Antarctic Expeditions, described respectively by Markham and Nordenskiöld; Tsybikoff's account of his journey to Central Tibet and Lhasa in 1900; Dr. Stein's paper on his geographical and remarkable archæological explorations in Chinese Turkistan; and Oscar Neumann's account of his journey in 1900–1901 from the Somali coast through southern Abyssinia to the Sudan.

OBITUARY.

DEATH OF MRS. ISABELLA BISHOP.—Mrs. Bishop (Isabella L. Bird, before her marriage in 1881), long distinguished as a traveller, died in Edinburgh on Oct. 7, at the age of 72 years. The results of her first great Eastern journey were published in 1880 under the title *Unbeaten Tracks in Japan.* After 1886 Mrs. Bishop travelled extensively in Persia, Kurdistan, Tibet, China, Corea, and Siberia, and published a series of books on her observations. In 1901, when she was nearly seventy years of age, she rode 1,000 miles in Morocco, including the Atlas Mountains in her journey. She was an accurate observer, took a wide interest in natural phenomena, was an enthusiastic botanist, and had some knowledge of chemistry, all of which helped to give value to her studies of nature and peoples. She usually chose as the scenes of her travels those regions that were coming into public notice, and thus her accurate and careful descriptions had a timely and practical interest.

NEW MAPS.

AMERICA.

CANADA.—Map of the Atlin Gold Fields, British Columbia. Natural scale, 1:380,160, or 6 statute miles to an inch. Annual *Report* for 1900 of the Geological Survey of Canada ((Vol. XIII). Ottawa, 1901.

The topography is from the instrumental and track surveys of 1899–1900. The geological indications show that the gold-bearing rocks are confined to the greenstones, serpentines, and slates, and lie chiefly along Atlin Lake and Taku Arm.

CANADA.—Geological maps of the East Coasts of Hudson Bay and James Bay from Cape Wolstenholme to the mouth of the Rupert River (3 sheets). Natural scale, 1:506,880, or 8 statute miles to an inch. Annual *Report* for 1900 of the Geological Survey of Canada (Vol. XIII). Ottawa, 1903.

The map embraces the entire east coast of Hudson Bay south of Hudson Strait. It illustrates the report of A. P. Low on his explorations in 1898 and 1899, when he made a log survey of the entire coast, the results of which appear on the map. The colours depicting geologic data extend along the coast and eastward into the Labrador Peninsula, along the Big, East Main, and Rupert Rivers and some other waterways. They show the vast predominance of Archaean and granite, with dikes of diabase trap and the so-called Cambrian, along some parts of the coast and on a considerable number of islands.